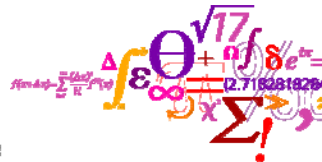


## Product Development Projects in an Organisational Context

27690 – Introduction to Project Management

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DTU Management Engineering  
Department of Management Engineering



### Mission Statement:

“To appreciate the considerations of **project management** in a real **organisation** where results are not just about creating new knowledge but turning it into **profitable products.**”

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### Overall - Learning objectives

To be able to:

1. **Describe** your research output as a product
2. **Identify** the type of organisation in which you are conducting your project
3. **Position** your project within a company's portfolio
4. **Apply** innovation management principles
5. **Apply** project management techniques to development of new products
6. **Describe** the difference between Sequential and Integrated Product Development (IPD)

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### Outline for this morning...

Section 1: 09.15 – 09.45

**Introduction to Product Development**

Section 2: 10.00 – 10.45

**Organisation in Product Development**

Section 3: 11.00 – 11.45

**Product Planning**

Round-up: 11.45 – 12.00

**A round-up of this morning's lectures**

Lunch: 12.00 – 13.00

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**This is an experiment!**

Lets work together to find common ground  
I'm going to learn as much as you are!

Not all will be applicable to drug development but all will be applicable to medical and pharmaceutical product development.

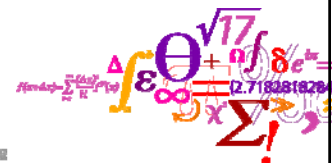
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SECTION 1 (09.15 - 09.45):

**Introduction to product development**

What affects and product and what does it effect?

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## 1<sup>st</sup> Section - Learning objectives

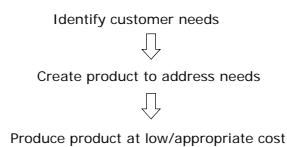
To be able to:

1. **Explain** what is meant by a product and its dependence on context.
2. **Explain** where product design sits in the product development process.
3. **Explain** where development decisions and activities may take affect.
4. **Formulate** your product development success criteria and challenges

A product is something someone provides...  
...which creates  
benefit for both the provider...  
...and the user/beneficiary.

## What is Product Development?

The general process entails:

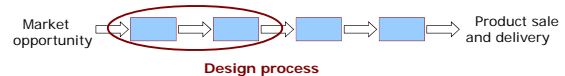


Interdisciplinary nature of product development



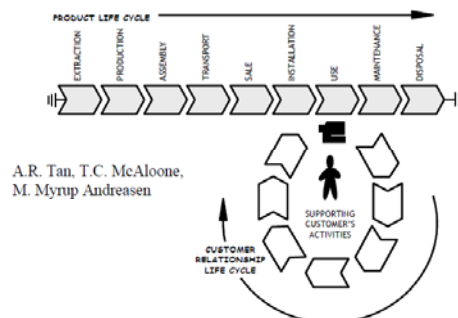
## What is Product Development?

Product development process



Where does  
Product  
Development  
Impact?

## Where our PD Decisions Impact?



## Buzz Groups

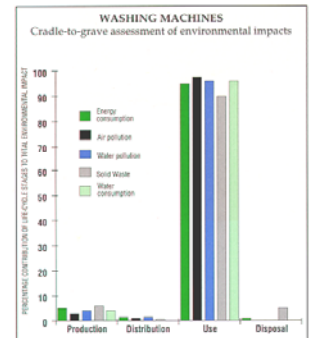
(3 minutes, in pairs, no writing, just talk!)



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## Where our Decisions Impact?



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## When we get it wrong...



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## Novo Nordisk

From insulin to diabetes healthcare

In order to make self-injection easier for diabetes patients, Novo Nordisk has developed the injection pens NovoPen and Novolet. The pens are more portable and less conspicuous, and improve the social acceptability (e.g. in public places) of insulin injection for some patients.

[www.novonordisk.com]



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## Toshiba Medical

From radiology systems to management of medical diagnostic systems

Toshiba Medical Systems Europe developed an Asset Management Services program for Europe as addition to its traditional sales of products under the name AMP2HI (Asset Managed Public/Private Healthcare Initiatives). AMP2HI concerns the outsourcing of product care within a healthcare institution and contains one or more of the following elements: equipment procurement, replacement, management, maintenance, repair and financing under agreed performance levels, coordination of planning groups and user training, and process analysis and optimization.

[www.toshiba-europe.com/Medical/]



[Wulfe, Toshiba Medical]

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## Examples of Product Development Costs

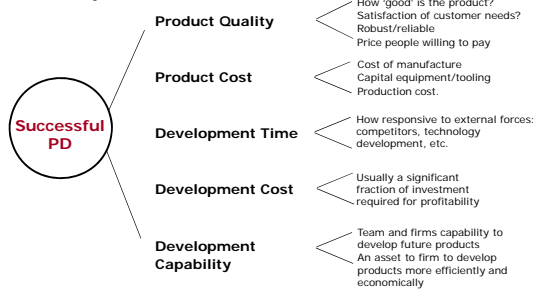
	Stanley Tools Jigsaw/Screwdriver	Rollerblade In-Line Skates	Hewlett-Packard DeskJet Printer	Volkswagen New Beetle Automobile	Boeing 777 Airplane
Annual production volume	100,000 units/year	100,000 units/year	4 million units/year	100,000 units/year	50 units/year
Sales lifetime	40 years	5 years	5 years	8 years	30 years
Sales price	\$3	\$200	\$300	\$17,000	\$130 million
Number of unique parts (part numbers)	9 parts	35 parts	200 parts	10,000 parts	130,000 parts
Development time (peak size)	1 year	2 years	1.5 years	3.5 years	4.5 years
Internal development team (peak size)	3 people	5 people	100 people	800 people	6,500 people
External development team (peak size)	3 people	10 people	75 people	800 people	10,000 people
Development cost (peak size)	\$150,000	\$750,000	\$50 million	\$400 million	\$3 billion
Production investment	\$150,000	\$1 million	\$25 million	\$200 million	\$3 billion

EXHIBIT 1-3  
Attributes of five products and their associated development efforts. All figures are approximate, based on publicly available information and company sources.

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## Establishing your Success Criteria

## Characteristics for Successful Product Development



Successful product development for 'for-profit' organisations  
Criteria other than economic success: usability, environment, an exciting product

## Challenges of Successful PD

- **Trade-offs:** E.g. Aeroplane engine, weight v cost
- **Dynamics:** Changes in: technology, competitors, customer needs
- **Detailed decisions:** E.g. choice of fasteners, can impact cost of assembly and manufacture, etc.
- **Time pressure:** Deadlines etc.
- **Economics:** Need reasonable return of investment

## Summary

- Your decisions in the development of a product may have serious downstream affects.
- You may be scientists or engineers but when hoping to create commercial value you must think like designers and create effective PRODUCTS.

### Meeting the learning objectives?

To be able to:

1. Explain what is meant by a product and its dependence on context.
2. Explain where product design sits in the product development process.
3. Explain where development decisions and activities may take affect.
4. Formulate your product development success criteria and challenges. – **Next exercise!**

## Exercises (in pairs)

- 1) Write down what you consider to be the most important evaluation criteria in drug development (see slide 26 for ideas).
- 1) Write down what you consider to be the most important challenges in drug development (see slide 27 for idea).

*Consider asking your project line manager whether s/he would agree. These can be used to evaluate the success of your project work.*

Any Questions ?

15min break –  
back by 10.00